

PHOTOGRAPHIC INTERPRETATION REPORT



**SELECTED
MAJOR COMMUNICATIONS
FACILITIES
NORTH VIETNAM**

NPIC/R-134/68

JANUARY 1969

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W A R N I N G

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PHOTOGRAPHIC INTERPRETATION REPORT

**SELECTED
MAJOR COMMUNICATIONS FACILITIES
NORTH VIETNAM**

JANUARY 1969

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

NO FOREIGN DISSEM

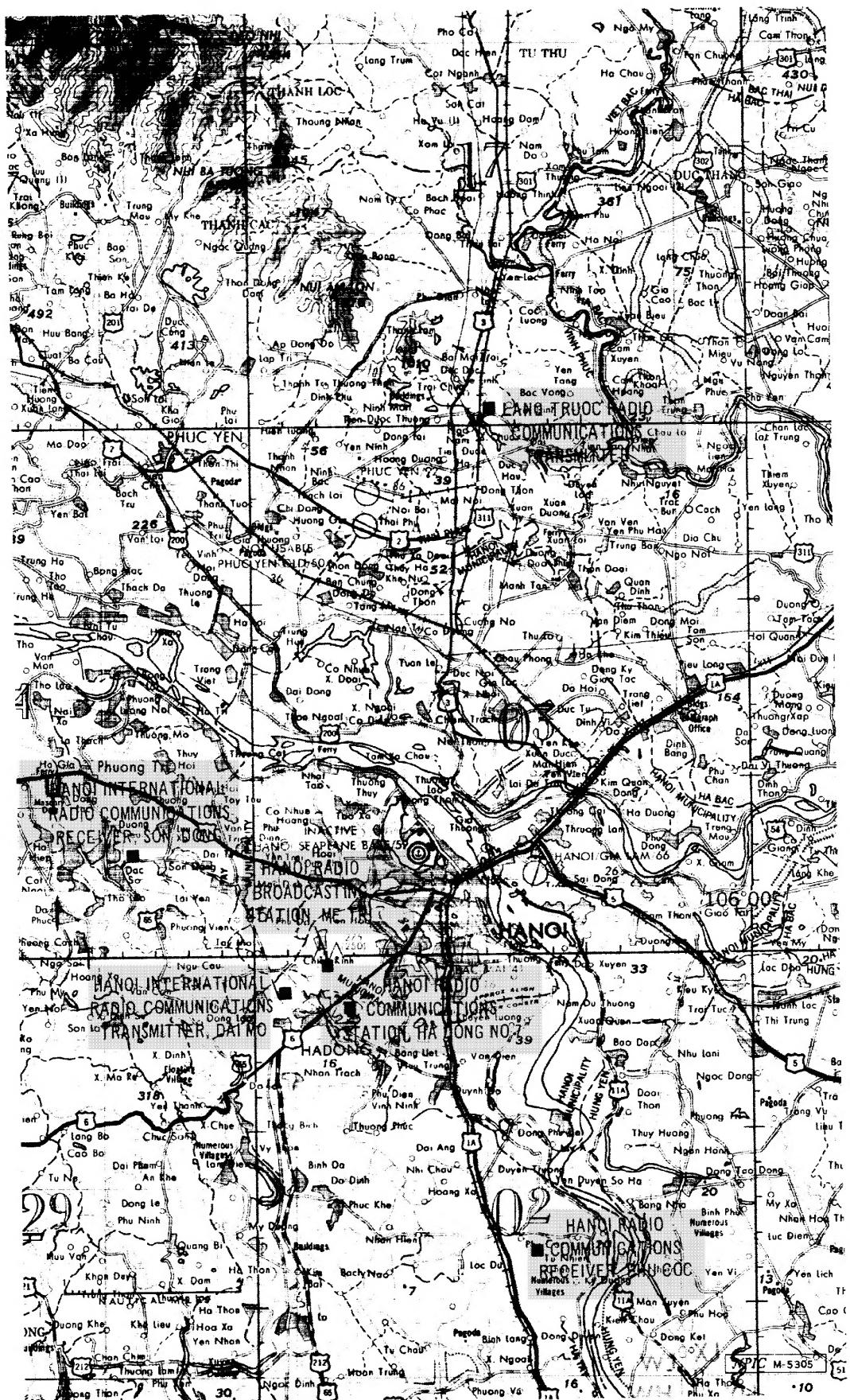


FIGURE 1. LOCATION MAP.

25X1C

INTRODUCTION

The North Vietnamese have established at least nine major communications facilities in North Vietnam. Six of these, in the immediate Hanoi area (Figure 1), are treated in detail in this report. These installations provide Hanoi with the comprehensive transmitting and receiving capability of a modern national and international communications network for direct support of North Vietnamese military and civilian needs. The installations and the order in which they appear in this report are as follows:

<u>NAME</u>	<u>GEO. COORDS.</u>	<u>BE NO.</u>	<u>PAGE NO.</u>
Hanoi International Radio Communications Transmitter, Dai Mo	20-58 [REDACTED] N 105-46-[REDACTED] E	[REDACTED]	2
Hanoi International Radio Communications Receiver, Son Dong	21-02 [REDACTED] N 105-41-[REDACTED] E	[REDACTED]	8
Lang Truoc Radio Communications Transmitter	21-15 [REDACTED] N 105-52-[REDACTED] E	[REDACTED]	14
Hanoi Radio Broadcasting Station, Me Tri	20-59 [REDACTED] N 105-47-[REDACTED] E	[REDACTED]	20
Hanoi Radio Communications Station, Ha Dong No 7	20-58 [REDACTED] N 105-47-[REDACTED] E	[REDACTED]	26
Hanoi Radio Communications Receiver, Phu Coc	20-51 [REDACTED] N 105-53-[REDACTED] E	[REDACTED]	32

25X1D 25X1D 25X1A

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NO FOREIGN DISSEM [REDACTED]

NPIC/R-134/68

25X1C

HANOI INTERNATIONAL
RADIO COMMUNICATIONS
TRANSMITTER, DAI MO

[REDACTED]

25X1A

- 2 -

SECRET

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NO FOREIGN DISSEM [REDACTED]

25X1C

INSTALLATION OR ACTIVITY NAME Hanoi International Radio Communications Transmitter, Dai Mo				COUNTRY VN
25X1D	25X1D	25X1D	25X1A	
UTM COORDINATES [REDACTED]	GEOGRAPHIC COORDINATES 20-58 [REDACTED] N 105-46 [REDACTED] E	CATEGORY [REDACTED]	COMIREX NO. None	NIETB NO. None
MAP REFERENCE AMS Series L7014, Sheet 6150 I, 1st ed, 1965, Scale 1:50,000 (Unclassified)				
LATEST IMAGERY USED [REDACTED]	NEGATION DATE (If required) None			25X1A

25X1D

This station is located 5.7 nautical miles (nm) southwest of Hanoi and is served by an all-weather dirt road leading 1.1 nm southeast to Route 6 at Ha Dong. Two AAA sites are within 0.5 nm east and south of the station (Figure 2).

The antenna farm contains 12 rhombic, four VEE, and 12 horizontal dipole antennas (Figure 3). The rhombic antennas provide long range, high frequency communications to Europe, Asia, and Africa with double rhombic antennas oriented toward Europe and north Africa (Figure 4). The VEE antennas, [REDACTED]

25X1B

25X1B

[REDACTED] are probably for omni-directional, short range communications. The horizontal dipole antennas are oriented for high frequency transmissions (primarily in the vicinity of [REDACTED] megahertz) throughout southern China and Southeast Asia (Figure 5). The entire antenna farm is probably fed from the main control building with some of the rhombic antennas having an alternate feed from the alternate control area.

The primary transmitting facilities are housed in the H-shaped building surrounded by an earth-mounded concrete wall (inset, Figure 3) except for three sections where the antenna feeds leave the building. These three sections consist of earth fill between two concrete walls. Also within the main control area are six support buildings, a substation, two guard towers, two cooling ponds, a probable pumphouse, and an underground reservoir.

25X1D

25X1D

South-southeast of the main control area is the alternate control area which was constructed in [REDACTED]. It contains two earth-mounded bunkers, one, a control bunker with feed lines leading to some of the rhombic antennas; the other bunker is probably for support.

The fenced support area northeast of the main control area contains four probable barracks, one messhall, a substation, and three support buildings.

25X1B

The control building at Dai Mo is connected to the Hanoi Radio Broadcasting Station, Me Tri ([REDACTED] 1.6 nm northeast, by a cable scar (Figure 2). Another cable scar and a land line are evident leading northeast from the Me Tri control building toward the Hanoi Citadel. This communications line is probably used to link the government control facilities in Hanoi with the two radio transmitting stations.

Electric power is provided by external sources via substations within the control and support areas. Diesel generators for emergency power are probably available; however, they have not been identified on photography.

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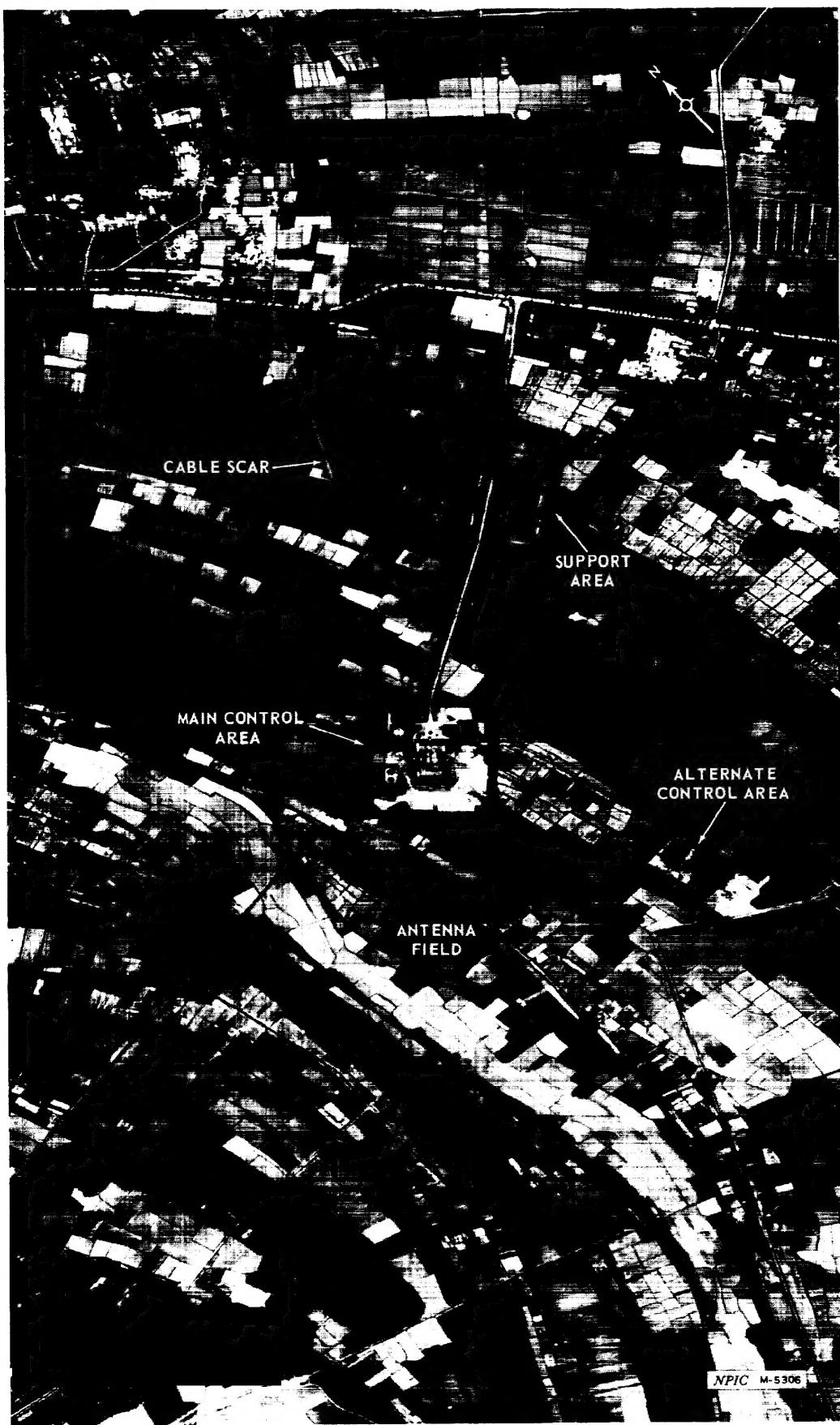


FIGURE 2. HANOI INTERNATIONAL RADIO COMMUNICATIONS TRANSMITTER, DAI MO, NORTH VIETNAM.

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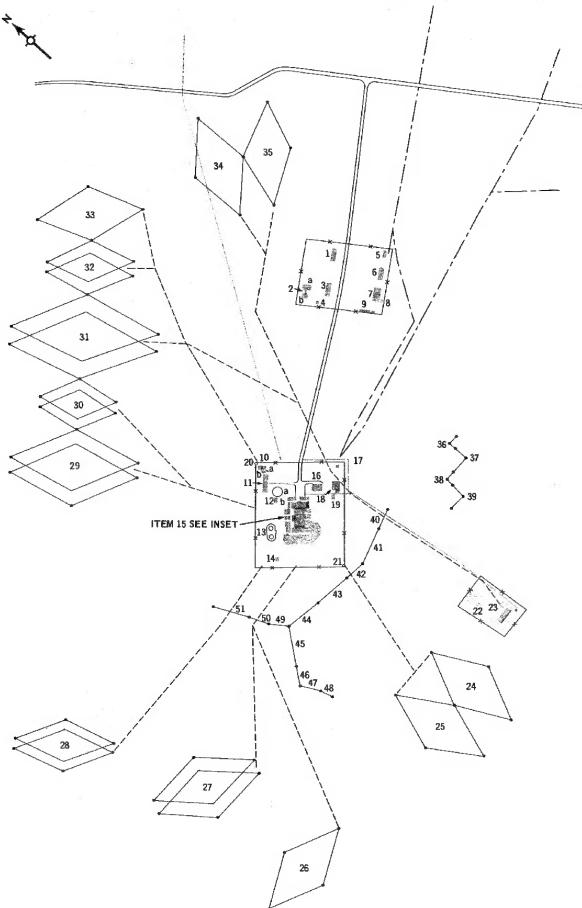
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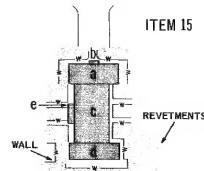


ITEM	DESCRIPTION	DIMENSIONS (FT)
1	PROBABLE BARRACKS	25X1D
2a	KITCHEN	
b	MESSHALL	
c	PARKING LOT	
3	PROBABLE BARRACKS	
4	SUPPORT BUILDING	
5	SECTION	
6	PROBABLE BARRACKS	
7	SUPPORT BUILDING	
8	SUPPORT BUILDING	
10	SUPPORT BUILDING	
a	SECTION	
b	SECTION	
11	SUPPORT BUILDING	
12a	PROBABLE UNDERGROUND WATER TOWER	
b	PROBABLE Pumphouse	
13	2 COOLING PONDS	
14	SUPPORT BUILDING	
15	REVETTED TRANSMITTER BUILDING	
a	SECTION	
b	SECTION	
c	SECTION	
d	SECTION	
e	SECTION	
16	SUPPORT BUILDING	
17	SUPPORT BUILDING	
18	SUPPORT BUILDING	
20	GUN TOWER	
21	GUARD TOWER	
22	SUPPORT BUNKER (EARTH COVERED)	
23	REVEITED ALTERNATE TRANSMITTER BUNKER	

ANT NO	AXIS (FT) MAJ MIN	AVERAGE LENGTH ONE SIDE (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 4)	COMPUTED FREQUENCY (MEGAHERTZ)
24				SOUTH VIETNAM, EAST- ERN CAMBODIA, SOUTH- ERN LAOS, INDIA	
25				SOUTH VIETNAM, EAST- ERN CAMBODIA, SOUTH- ERN LAOS, BURMA, INDIA	
26				CAIRO, NORTH AFRICA	
27				EUROPE	
28				EUROPE	
30				EUROPE	
31				TIBET, TASHKENT, SOUTH- ERN EUROPE	
32				PEKING	
33					
34					
35					

NOTE: EACH ANTENNA HAS A [REDACTED] AND IS ASSUMED TO BE 4 WAVE LENGTHS LONG ON A SIDE.

25X1D



NOTE: EACH ANTENNA HAS 90° INCLUDED (APEX) ANGLE,
IS OMNI-DIRECTIONAL AND EACH LEG IS 1/4 WAVE LONG.

25X1D

ANT NO	POLE SEPARATION (FT)	EST ANT LENGTH (FT)	INITIAL GREAT CIRCLE (°)	PROBABLE CORRESPONDENT (SEE FIGURE 5)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
36				HUE/HA GIANG	
37				CAO BANG/PHNOM PENH	
38				CAO BANG/PHNOM PENH	
39				YULIN/LAO CAI	
				VUNG TAU	
				SOUTHEAST CHINA/NORTHEAST LAOS	
				MONG CAI/LUANG PRABANG	
				MANSON/THAILAND DESERTS	
				SOUTHEAST CHINA/NORTHEAST LAOS	
				SOUTHEAST CHINA/NORTHEAST LAOS	

NOTE: EACH ANTENNA HAS 90° INCLUDED (APEX) ANGLE,
IS OMNI-DIRECTIONAL AND EACH LEG IS 1/4 WAVE LONG.

25X1D

FIGURE 3. HANOI INTERNATIONAL RADIO COMMUNICATIONS TRANSMITTER, DAI MO, NORTH VIETNAM.

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25X1C

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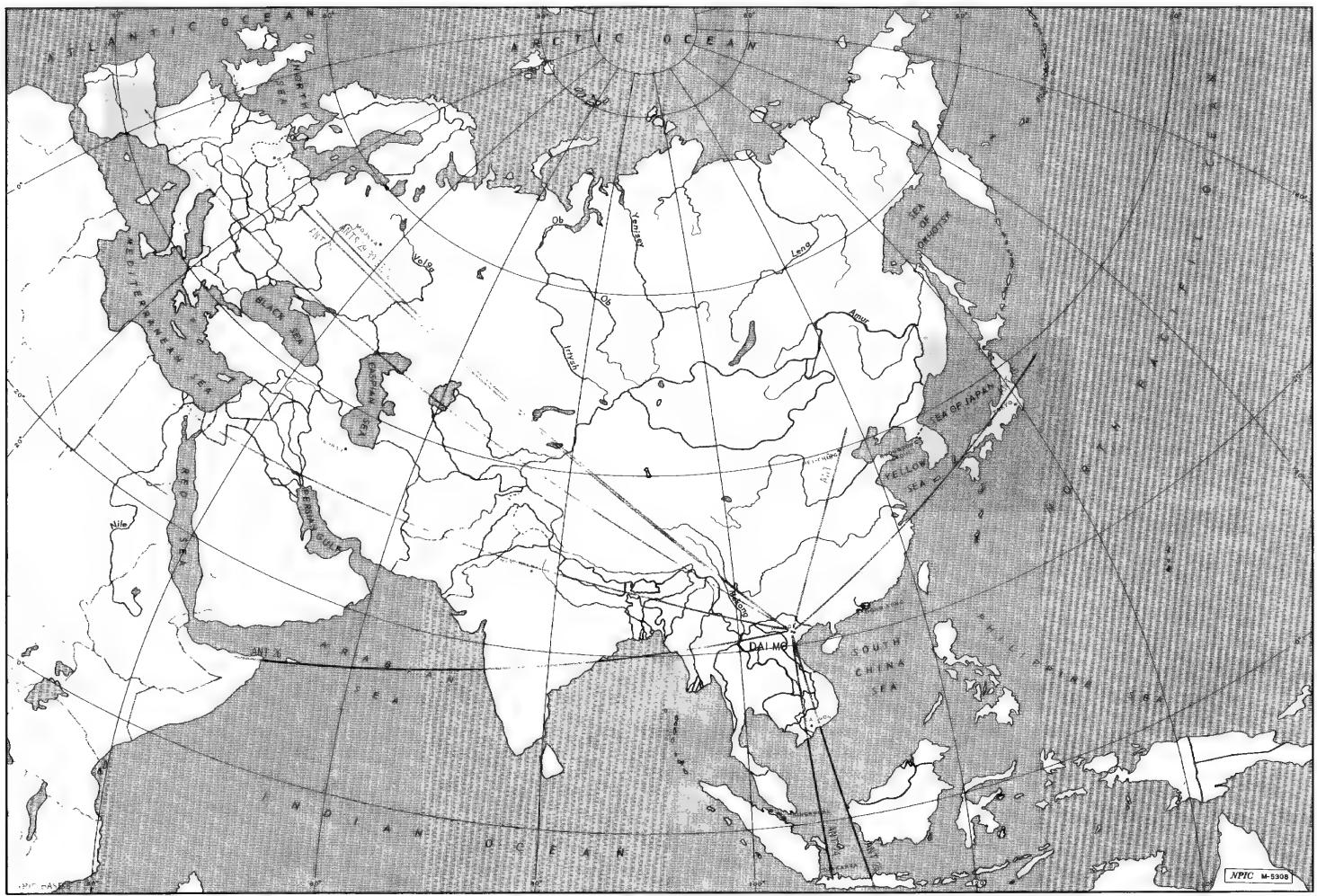


FIGURE 4. FORWARD AZIMUTH PROJECTIONS FOR RHOMBIC ANTENNAS AT HANOI INTERNATIONAL RADIO COMMUNICATIONS TRANSMITTER, DAI MO, NORTH VIETNAM.

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[REDACTED]

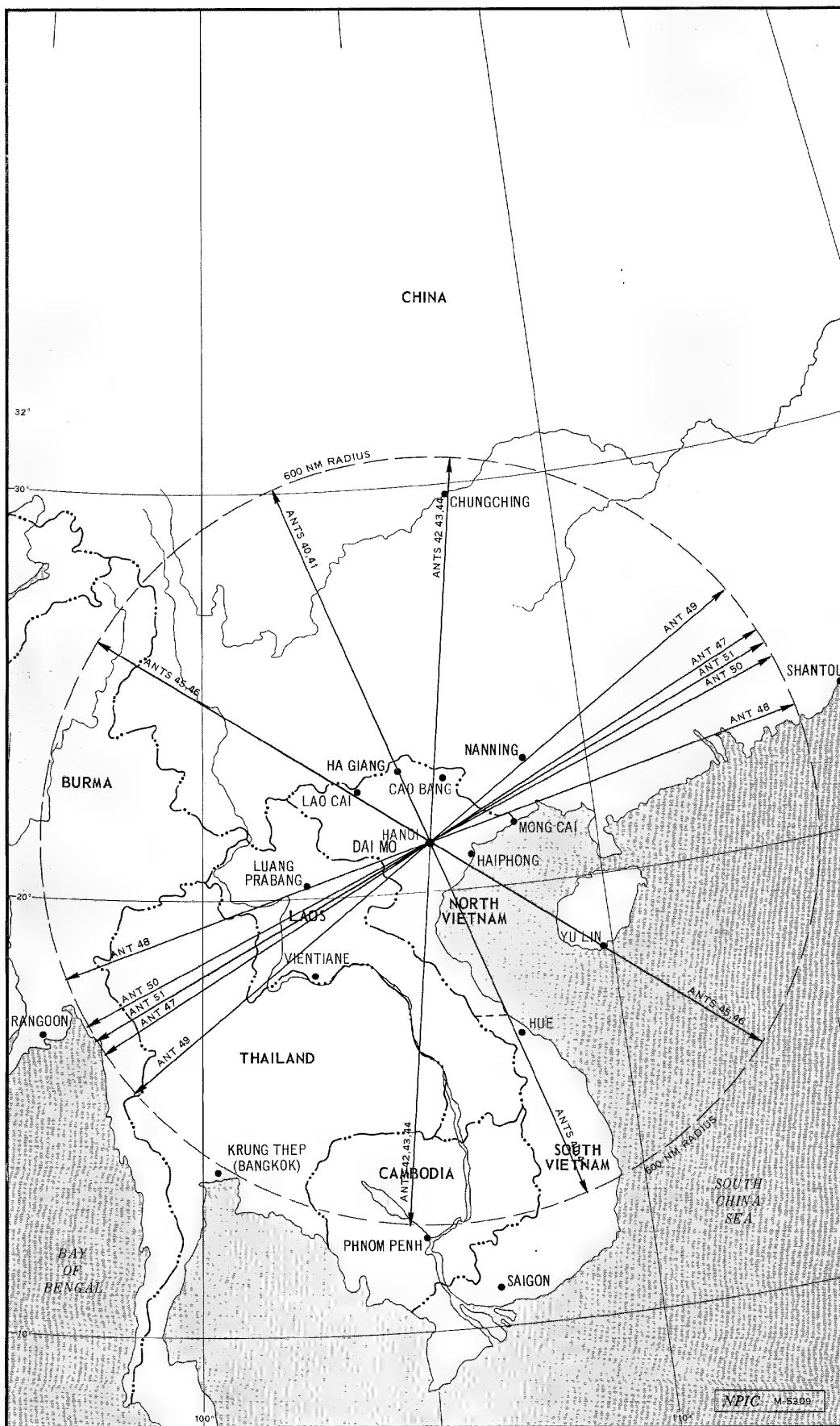
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25X1C



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NO FOREIGN DISSEM [REDACTED]

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25X1C

HANOI INTERNATIONAL RADIO COMMUNICATIONS RECEIVER, SON DONG

[REDACTED] 25X1A

INSTALLATION OR ACTIVITY NAME Hanoi International Radio Communications Receiver, Son Dong		25X1A	COUNTRY VN
25X1D	UTM COORDINATES 25X1D	GEOGRAPHIC COORDINATES 21-02-[REDACTED] N 105-41-[REDACTED] E	COMIREX NO. None
MAP REFERENCE AMS Series L7014, Sheet 6151 III, 1st ed, 1965, Scale 1:50,000 (Unclassified)		NETB NO. None	
LATEST IMAGERY USED [REDACTED]		NEGATION DATE (If required) None	25X1A

25X1D

The Son Dong receiving station, 8.6 nm west-northwest of Hanoi, is served by an unnumbered dirt road leading 1 nm west to Route 65 at Que Duong. One eight-gun AAA site is 0.5 nm southwest of the station (Figure 6).

The antenna farm contains 15 rhombic and six horizontal dipole antennas (Figure 7). The rhombic antennas are capable of receiving long range, high frequency communications from Europe, Asia, and Africa with double rhombic antennas oriented toward Europe and north Africa (Figure 8). The horizontal dipole antennas are oriented for high frequency reception (primarily between [REDACTED] megahertz) throughout southern China and Southeast Asia (Figure 9). Feed lines from all the antennas lead to the control building with feeds from the rhombic antennas, oriented toward Europe, also leading to a bunkered probable alternate receiver building.

25X1D

The control area consists of the primary receiving facilities housed in a single-story building, a generator and transformer building, two support buildings, and a guard tower. A secured alternate control area contains two earth-mounded bunkers, one, a probable receiver bunker and the other, a probable support bunker. The support area, separated from the control area by a wall, contains 15 support buildings and a guard tower.



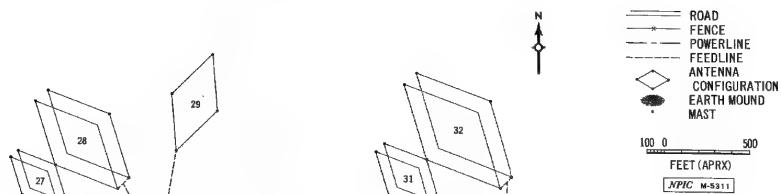
FIGURE 6. HANOI INTERNATIONAL RADIO COMMUNICATIONS RECEIVER, SON DONG, NORTH VIETNAM.

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STRUCTURES

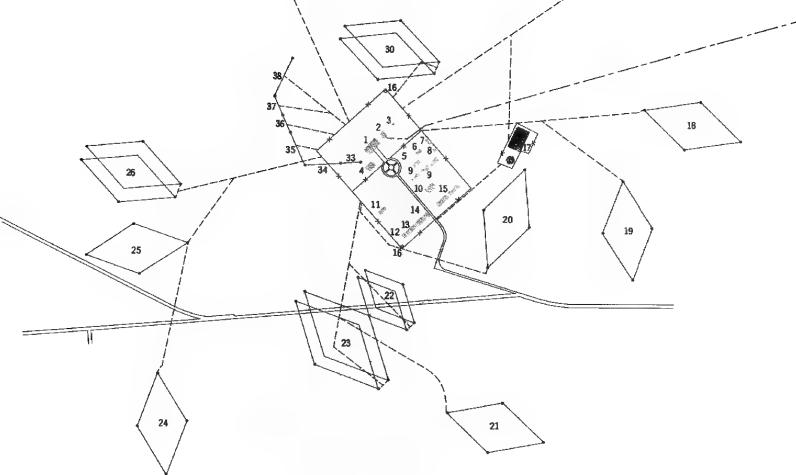


ITEM	DESCRIPTION	DIMENSIONS (FT)
1	RECEIVER BUILDING	
2	GENERATOR AND TRANSFORMER	
3	BUILDING	
4	SUPPORT BUILDING	
5	SUPPORT BUILDING	
6	SUPPORT BUILDING	
7	SUPPORT BUILDING	
8	SUPPORT BUILDING	
9	SUPPORT BUILDINGS	
10	SUPPORT BUILDING	
11	SUPPORT BUILDING	
12	SUPPORT BUILDING	
13	SUPPORT BUILDING	
14	SUPPORT BUILDING	
15	SUPPORT BUILDING	
16	2 SUPPORT BUILDINGS	
17	2 GUARD TOWERS	
18	EARTH-MOUNDED PROB	
19	ANALOGUE RECEIVER	
20	BUILDING	
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		

*APPROXIMATE

25X1D

RHOMBIC



25X1D

ANT NO	AXIS (FT)	AVERAGE LENGTH ONE SIDE (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 8)	COMPUTED FREQUENCY (MEGAHERTZ)
18	600	315	340		
19	595	295	335		
20	610	290	340		
21	600	300	340		
22	425	210	240		
23	735	260	400		
24	600	290	335		
25	605	290	340	MANILA, SOUTH VIETNAM, THAILAND, CAMBODIA, NORTH (PEKING, KOREA, JAPAN), MANILA, EUROPE	
26	605	290	330	CAIRO, EUROPE	
27	420	210	235	MANILA, EUROPE	
28	710	370	400	NORTH (PEKING, KOREA, JAPAN), CAIRO	
29	600	290	340	EUROPE	
30	600	290	330		
31	480	240	370		
32	850	410	465		

25X1B

NOTE: EACH ANTENNA AVERAGES 4 WAVELENGTHS LONG ON A SIDE.

25X1D

DIPOLE

ANT NO	POLE SEPARATION (FT)	EST ANT LENGTH (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 9)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
33				LAOS/IN-COUNTRY	
34				LAOS/IN-COUNTRY	
35				HONG KONG/LAO AND IN-COUNTRY	
36				HONG KONG/LAO AND IN-COUNTRY	
37				HONG KONG/LAO AND IN-COUNTRY	
38				YULIN/MENGZU	
				180/360	
				180/360	
				70/250	
				70/250	
				120/300	

25X1B

FIGURE 7. HANOI INTERNATIONAL RADIO COMMUNICATIONS RECEIVER, SON DONG, NORTH VIETNAM.

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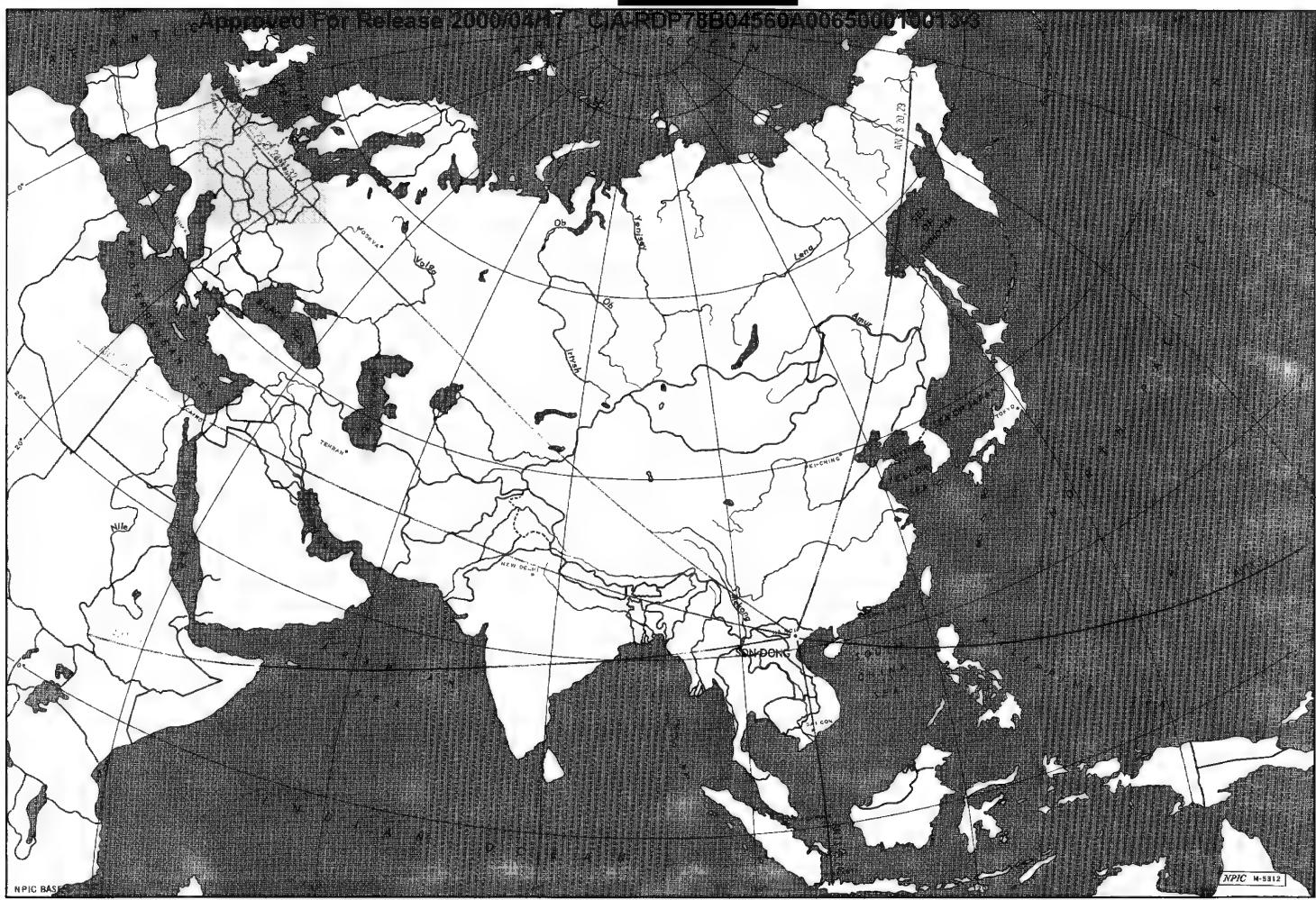


FIGURE 8. FORWARD AZIMUTH PROJECTIONS FOR RHOMBIC ANTENNAS AT HANOI INTERNATIONAL RADIO COMMUNICATIONS RECEIVER, SON DONG, NORTH VIETNAM.

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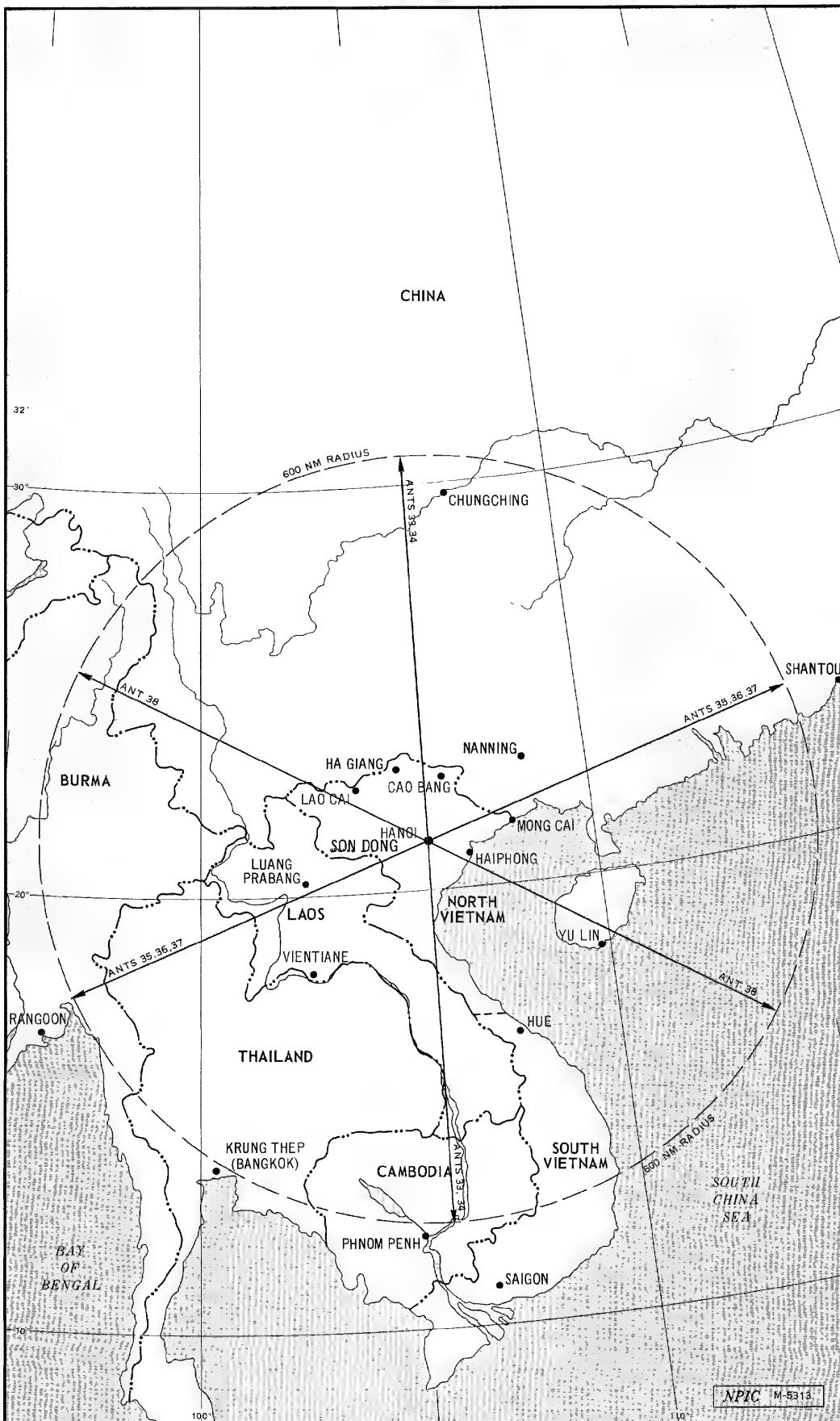


FIGURE 9. AZIMUTH PROJECTIONS FOR HORIZONTAL DIPOLE ANTENNAS AT HANOI INTERNATIONAL RADIO COMMUNICATIONS RECEIVER, SON DONG, NORTH VIETNAM.

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NO FOREIGN DISSEM

25X1C

25X1C

LANG TRUOC
RADIO COMMUNICATIONS
TRANSMITTER

25X1A

INSTALLATION OR ACTIVITY NAME				COUNTRY	
25X1D	Lang Truoc Radio Communications Transmitter			25X1A	VN
25X1D	UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	COMIREX NO.	NIETB NO.
	[REDACTED]	21-15 [REDACTED] N 105-52 [REDACTED] E	[REDACTED]	[REDACTED]	None
25X1D	MAP REFERENCE AMS Series L7014, Sheet 6151 I, 1st ed, 1965, Scale 1:50,000 (Unclassified)				None
	LATEST IMAGERY USED	NEGATION DATE (If required)			25X1A
	[REDACTED]	[REDACTED]			

25X1D

The Lang Truoc facility is located 13.9 nm north of Hanoi and is served by a dirt road leading 1 nm west to Route 3 at Tien Duoc Thuong. The Hanoi-Thai Nguyen Railroad Line passes immediately west of the facility. This station, constructed [REDACTED] is probably being used to support insurgency operations in Southeast Asia (Figure 10).³

25X1D

The antenna farm contains three rhombic, four VEE, and 13 horizontal dipole antennas (Figure 11). Two of the rhombic antennas are oriented for day-night transmission toward Moscow, while the third rhombic antenna is oriented for transmission toward Peking (Figure 12). The VEE antennas, [REDACTED]

25X1B

25X1B [REDACTED] are probably for omni-directional, short range communications. The majority of the horizontal dipole antennas are oriented for high frequency communications to all of Southeast Asia from Rangoon to the South Vietnam coast. The back azimuths for these antennas cover all of southern China (Figure 13). Antenna feedlines for all antennas lead from the transmitter building.

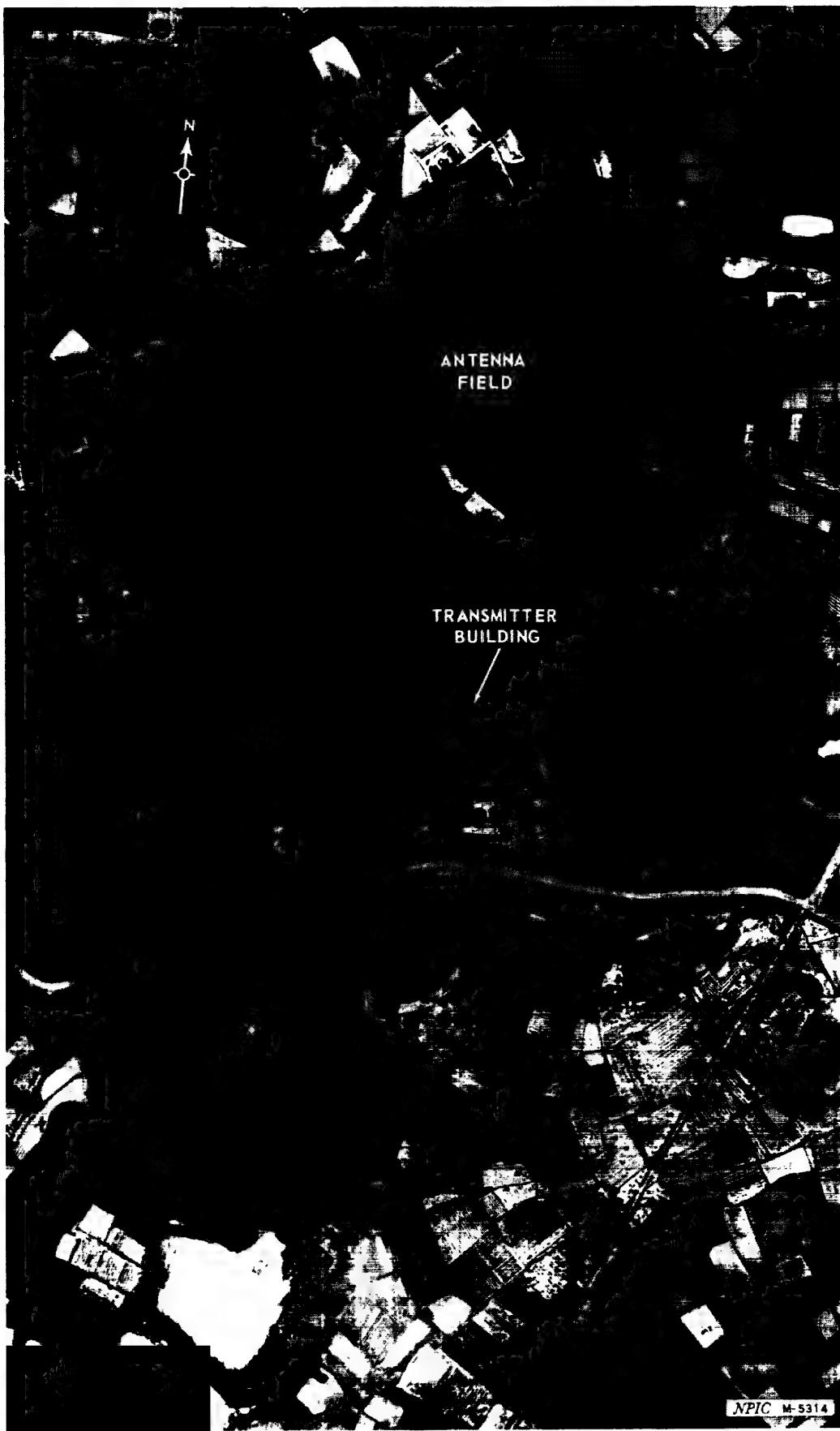
The transmitting facilities are housed in a single-story, H-shaped, concrete building. A pumphouse, a generator, and an adjacent support building are also in the control area. A pipeline for cooling water leads from a lake 0.8 nm south to the transmitter building.

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25X1C



25X1D

FIGURE 10. LANG TRUOC RADIO COMMUNICATIONS TRANSMITTER, NORTH VIETNAM.

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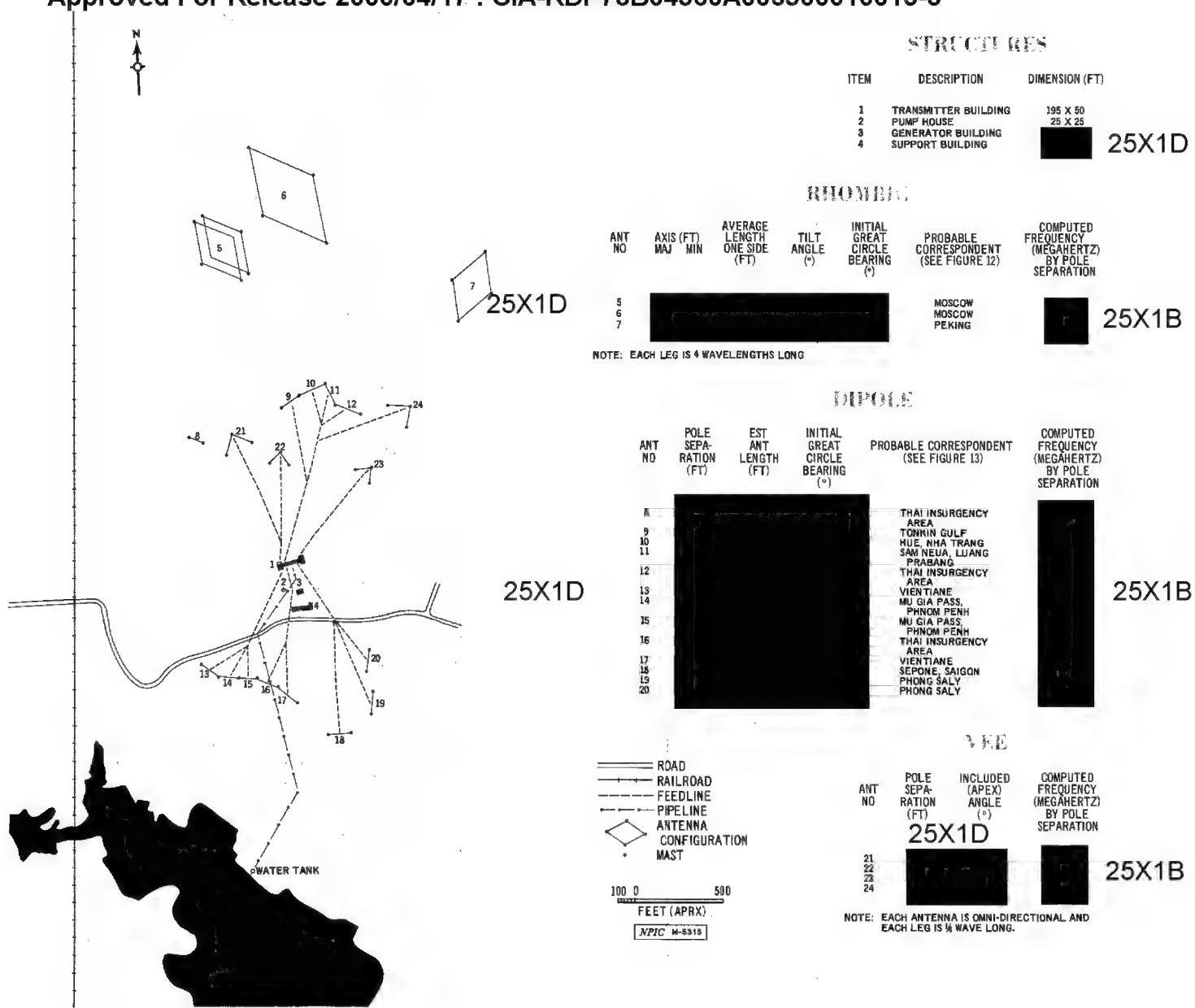


FIGURE 11. LANG TRUOC RADIO COMMUNICATIONS TRANSMITTER, NORTH VIETNAM.

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25X1C

25X1C

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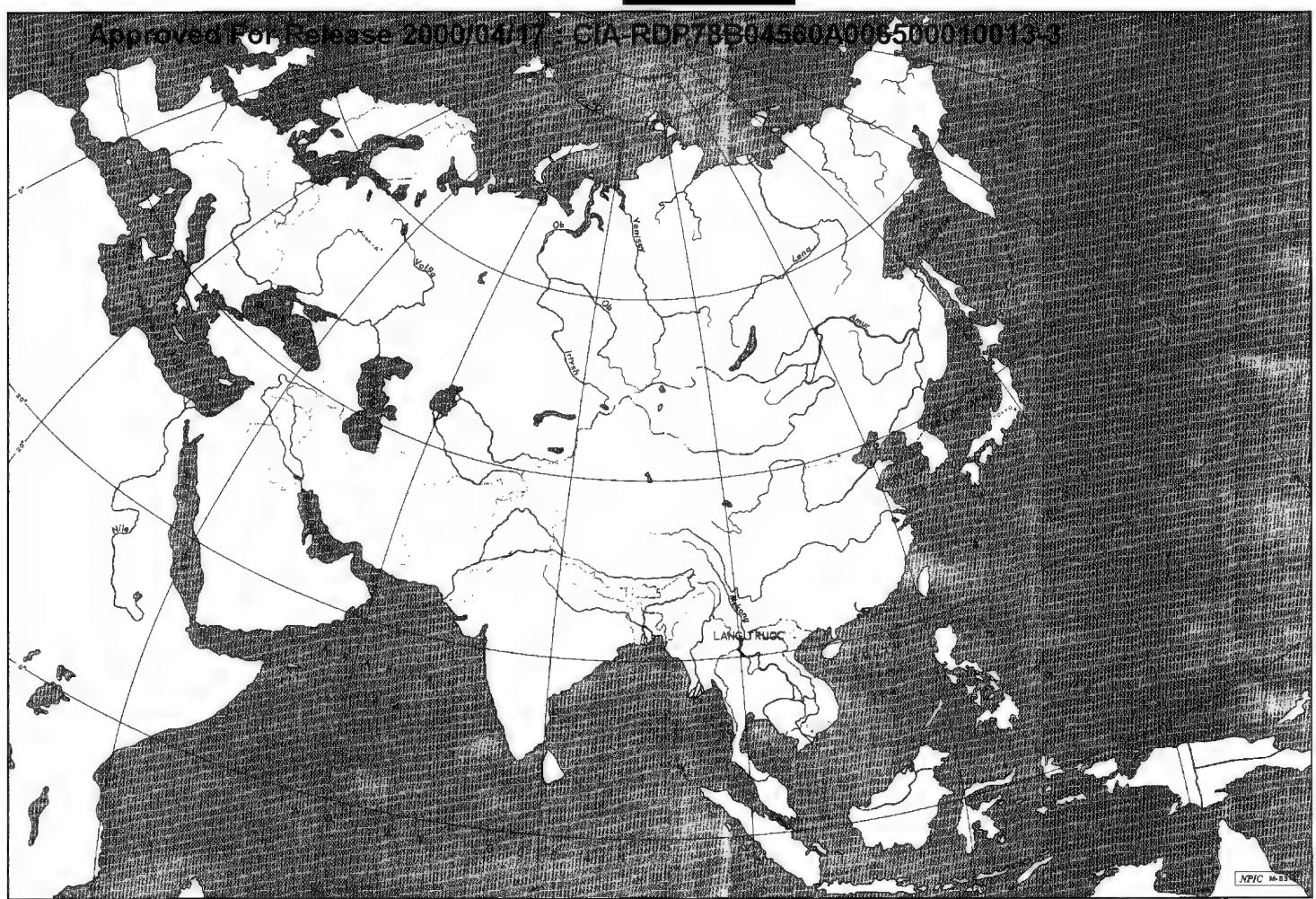


FIGURE 12. FORWARD AZIMUTH PROJECTIONS FOR RHOMBIC ANTENNAS AT LANG TRUC RADIO COMMUNICATIONS TRANSMITTER, NORTH VIETNAM.

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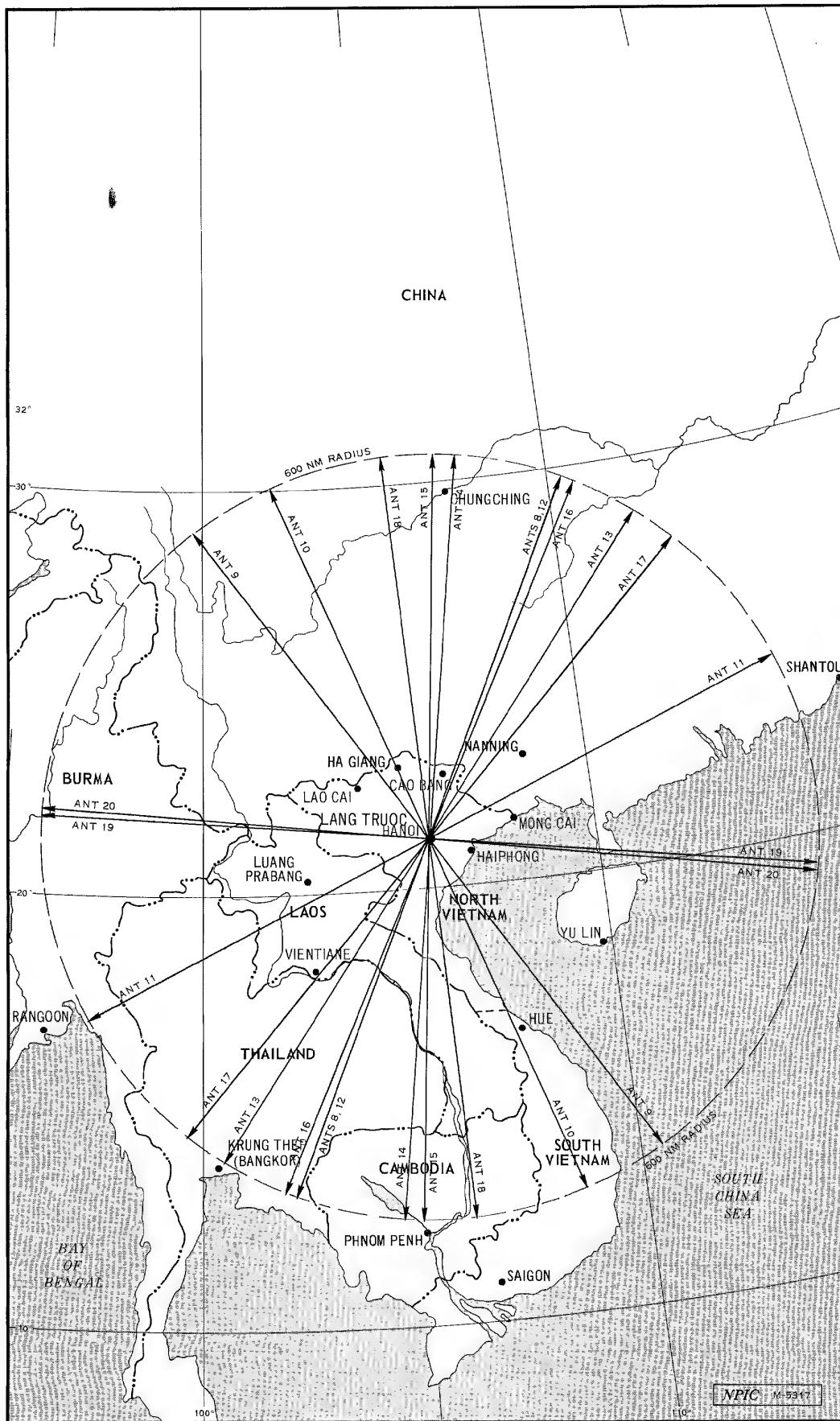


FIGURE 13. AZIMUTH PROJECTIONS FOR HORIZONTAL DIPOLE ANTENNAS AT LANG TRUOC RADIO COMMUNICATIONS TRANSMITTER, NORTH VIETNAM.

SECRET
NO FOREIGN DISSEM [REDACTED]

25X1C

HANOI RADIO
BROADCASTING STATION,
ME TRI

[REDACTED] 25X1A [REDACTED]

INSTALLATION OR ACTIVITY NAME				COUNTRY
25X1D	Hanoi Radio Broadcasting Station, Me Tri			25X1A
25X1D	UTM COORDINATES	GEOGRAPHIC COORDINATES		COMIREX NO.
25X1D	[REDACTED]	20-59-[REDACTED] N 105-47-[REDACTED] E	[REDACTED]	None
25X1D	MAP REFERENCE	AMS Series L7014, Sheet 6150 I, 1st ed, 1965, Scale 1:50,000 (Unclassified)		
	LATEST IMAGERY USED	25X1D	NEGATION DATE (if required)	None

The Me Tri Broadcasting Station is located 4.3 nm southwest of Hanoi and is served by a secondary road leading 1 nm southeast to Route 6 at Phung Khoang. Defenses for this installation include four AAA sites within 0.5 nm of the station (Figure 14). The entire station, including the antenna masts, is located within a rectangular fenced area with a guard tower at each corner.

The antenna farm contains two vertical radiators, four double rhombic antennas in day-night pairs, and seven horizontal dipole antennas (Figure 15). The towers for the vertical radiators were apparently first constructed to support a horizontal dipole broadcast array; however, they presently support top loaded vertical radiators for omni-directional transmission. One pair of rhombic antennas is oriented for transmission toward Saigon and Djakarta, while the other pair of rhombic antennas is oriented for transmission toward central Europe (Figure 16). On the rhombic antennas oriented toward the south, certain antenna masts are shorter than others, indicating that each double rhombic consists of a high and a low antenna. One pair of horizontal dipoles is aligned with the antennas parallel to each other and oriented for north-south communications with a provision for switching the feed from one dipole to the other. Another horizontal dipole is oriented for transmission toward the Gulf of Tonkin or Kunming, China (Figure 17). Feedlines to these antennas lead from the main transmitter building. Four additional horizontal dipole antennas are oriented for transmission in a north-south direction and cut for different frequencies with feedlines leading from the secondary transmitter building.

The control area of the facility contains the main transmitter building, as well as an adjacent generator building (separately surrounded by double-walled, earth-filled, blast walls approximately [REDACTED] feet thick), an unprotected secondary transmitter building, a bunkered support building, three partially revetted buildings, a water tower, a cooling pond, and three additional support buildings. The support area contains a gatehouse, a messhall, a substation, seven barracks, and 14 support buildings. One of the support buildings in the western corner of the compound had foundations laid for blast walls in [REDACTED] however, the foundations remain incomplete.

25X1D

25X1D

25X1D

A cable scar connects the main transmitter building to the control area of the Hanoi International Radio Transmission Station, Dai Mo, 1.6 nm southwest. Another cable scar and a land line are discernible leading northeast from the Me Tri control building toward the Hanoi Citadel. This communications line, constructed in [REDACTED] is probably used to link the government control facilities in Hanoi with the two transmitting stations.

Electric power is provided to the station from external sources via a substation, and from a diesel generator within the control area.

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013-3
25X1C

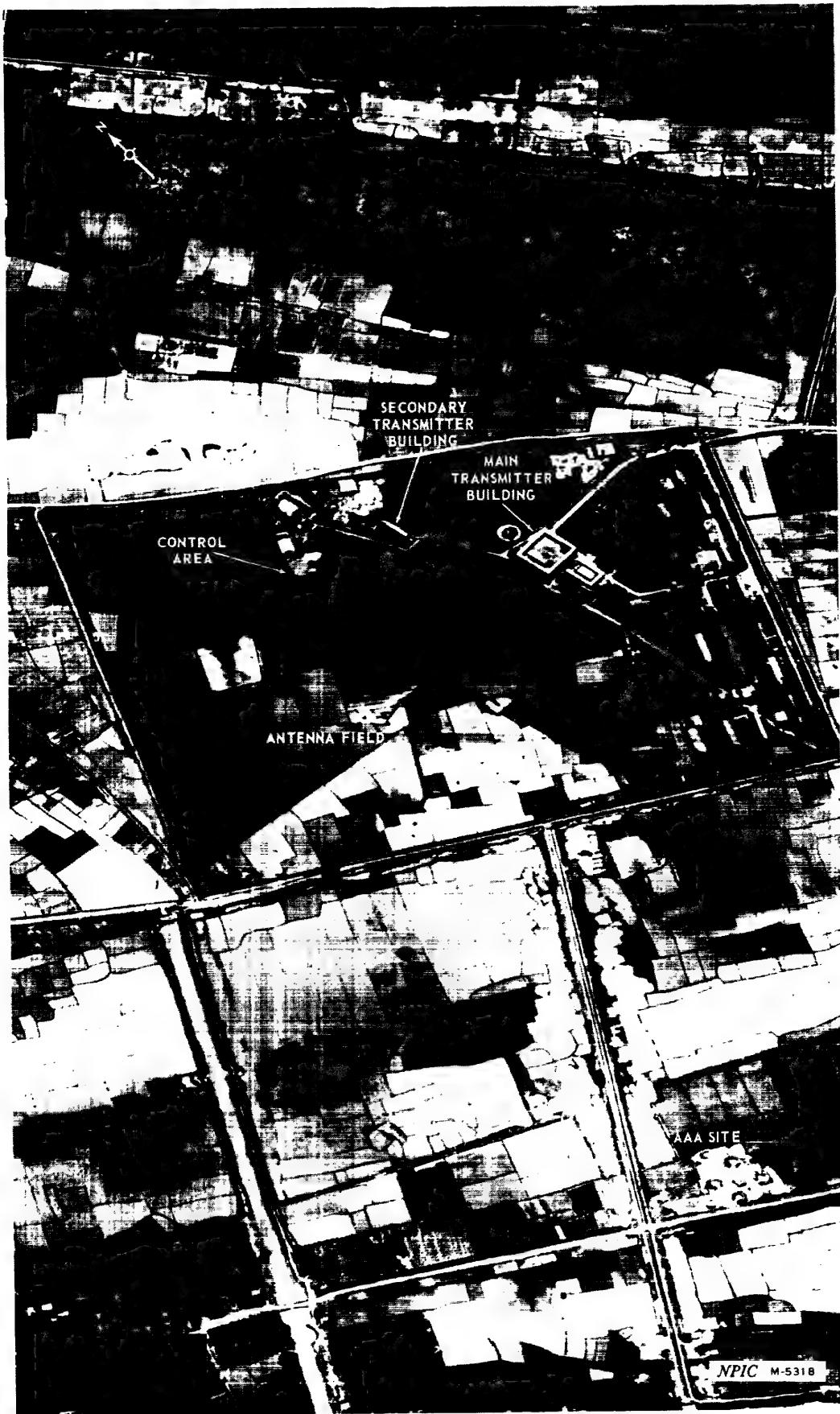


FIGURE 14. HANOI RADIO BROADCASTING STATION, ME TRI, NORTH VIETNAM.

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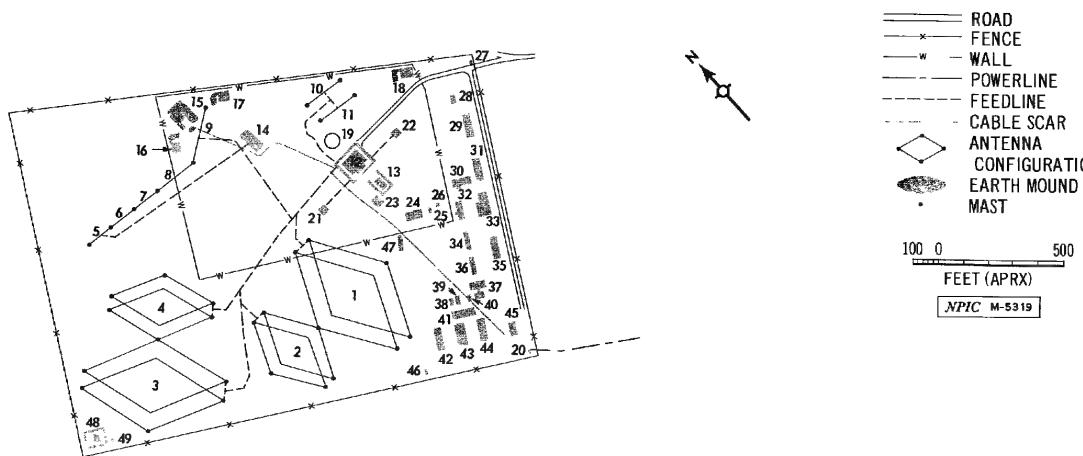
25X1C

SECRET

NPIC/R-134/68

Approved For Release 2000/0471 [REDACTED]

00125X1C



STR 671

RHOMBIC

ANT NO	AXIS (FT) MAJ MIN	AVERAGE LENGTH ONE SIDE (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 16)	COMPUTED FREQUENCY (MEGAHERTZ)	25X1D
1				SAIGON, DJAKARTA		
2				SAIGON, DJAKARTA		
3				CENTRAL EUROPE		
4				CENTRAL EUROPE		

NOTE: EACH ANTENNA TILT ANGLE IS 65° AND IS ASSUMED TO BE FOUR WAVELENGTHS LONG ON A SIDE.

DIPOLE

ANT NO	POLE SEPARATION (FT)	EST ANT LENGTH (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 17)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION	25X1D
5				SAIGON/CHUNGKING		
6				SAIGON/CHUNGKING		
7				SAIGON/CHUNGKING		
8				SAIGON/CHUNGKING		
9				TONKIN GULF/KUNMING		
10				SAIGON/CHUNGKING		
11				SAIGON/CHUNGKING		

25X1D

ITEM	DESCRIPTION	DIMENSIONS (FT)
12	MAIN TRANSMITTER BUILDING (WALLED)	
13	GENERATOR BUILDING (WALLED)	
14	SECONDARY TRANSMITTER BUILDING	
15	BUNKERED SUPPORT BUILDING	
16	PARTIALLY REVETTED BUILDING	
17	PARTIALLY REVETTED BUILDING	
18	PARTIALLY REVETTED BUILDING	
19	COOLING POND	
20	SUBSTATION	
21	320 FT VERTICAL RADIATING ANTENNA MAST	
22	325 FT VERTICAL RADIATING ANTENNA MAST	
23	SUPPORT BUILDING	
24	SUPPORT BUILDING	
25	SUPPORT BUILDING	
26	WATER TOWER	
27	GATEHOUSE	
28	SUPPORT BUILDING	
29	SUPPORT BUILDING	
30	SUPPORT BUILDING	
31	SUPPORT BUILDING	
32	SUPPORT BUILDING	
33	SUPPORT BUILDING	
34	BARRACKS	
35	BARRACKS	
36	BARRACKS	
37	MESSHALL AND KITCHEN	
38	SUPPORT BUILDING	
39	SUPPORT BUILDING	
40	SUPPORT BUILDING	
41	BARRACKS	
42	BARRACKS	
43	BARRACKS	
44	BARRACKS	
45	SUPPORT BUILDING	
46	SUPPORT BUILDING	
47	SUPPORT BUILDING	
48	SUPPORT BUILDING	
49	SUPPORT BUILDING	

FIGURE 15. HANOI RADIO BROADCASTING STATION, MÈ TRÌ, NORTH VIETNAM.

SECRET

Approved For Release 2000/0471 [REDACTED]

25X1C
0013-3

SECRET

25X1C

NPIC/R-134/68

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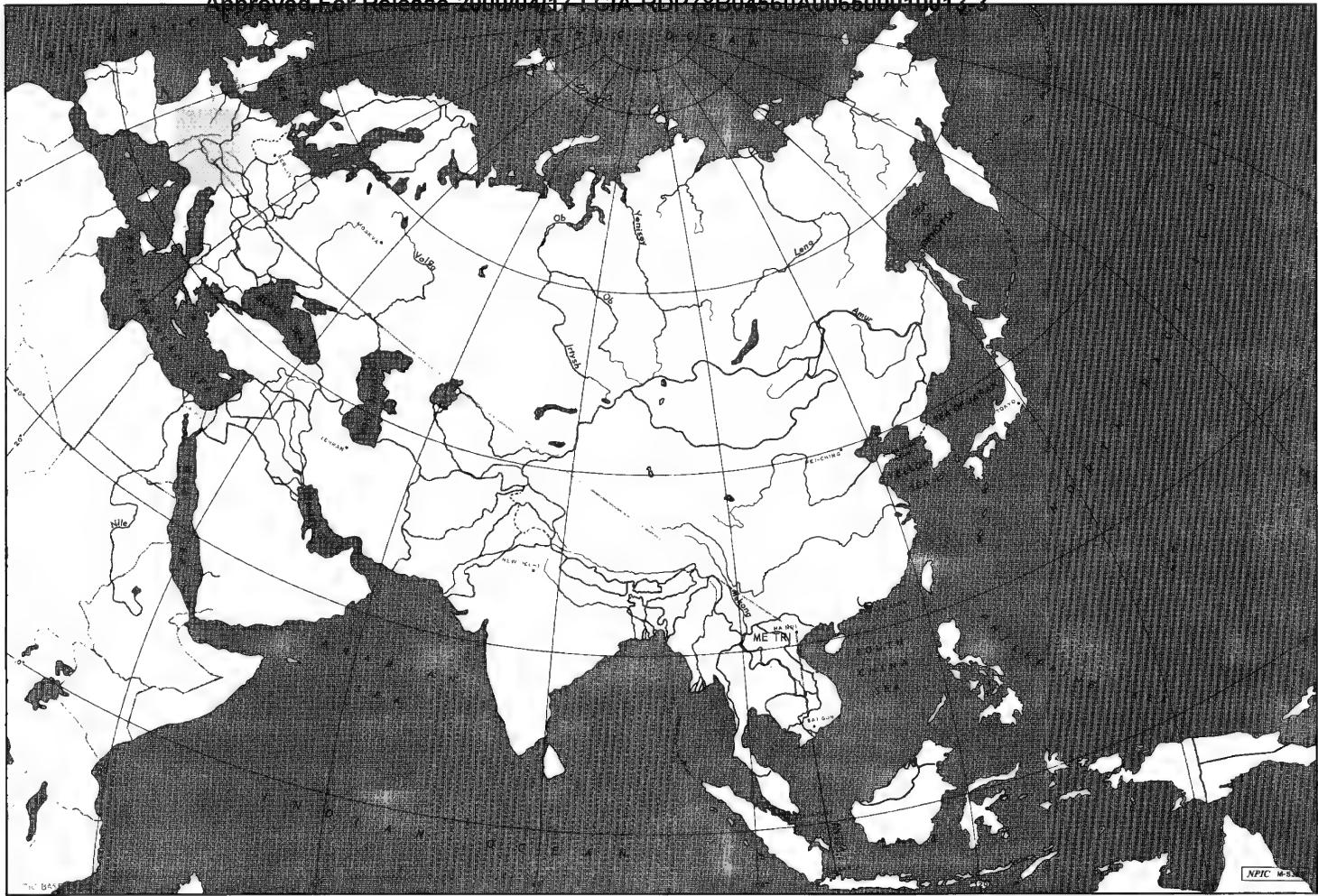


FIGURE 16. FORWARD AZIMUTH PROJECTIONS FOR RHOMBIC ANTENNAS AT HANOI RADIO BROADCASTING STATION, ME TRI, NORTH VIETNAM.

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NO FOREIGN DISSEM [REDACTED]

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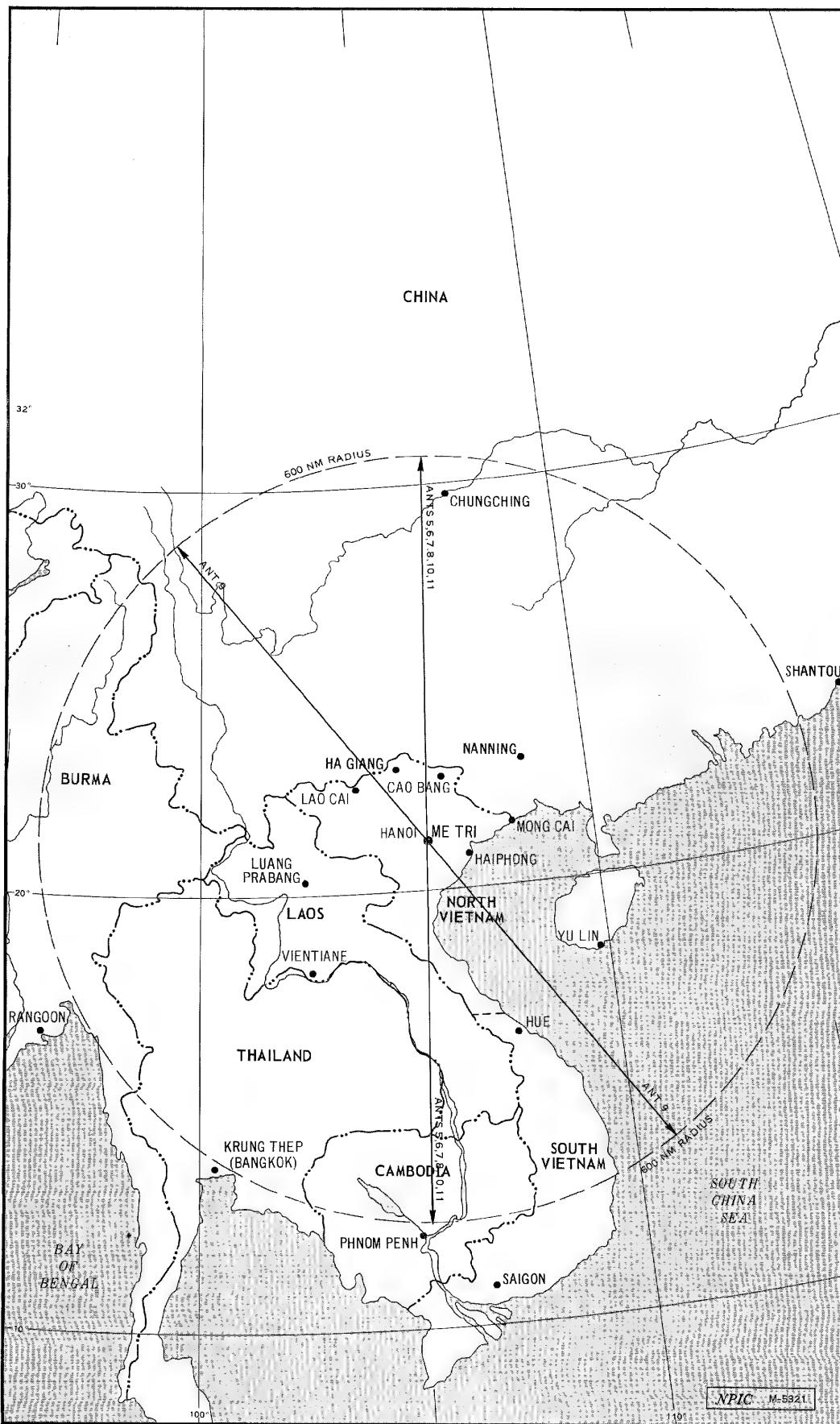


FIGURE 17. AZIMUTH PROJECTIONS FOR HORIZONTAL DIPOLE ANTENNAS AT HANOI RADIO BROADCASTING STATION, ME TRI, NORTH VIETNAM.

NO FOREIGN DISSEM [REDACTED]

[REDACTED] 25X1C

HANOI RADIO
COMMUNICATIONS STATION,
HA DONG NO 7

[REDACTED] 25X1A

25X1D

INSTALLATION OR ACTIVITY NAME Hanoi Radio Communications Station, Ha Dong No 7		25X1A	COUNTRY VN
LAT/LONG COORDINATES [REDACTED]	GEOGRAPHIC COORDINATES 20-58-[REDACTED] N 105-47-[REDACTED] E	CATEGORY [REDACTED]	COMIREX NO. None
MAP REFERENCE AMS Series L7014, Sheet 6150 I, 1st ed, 1965, Scale 1:50,000 (Unclassified)		25X1A	
LATEST IMAGERY USED [REDACTED]		NEGATION DATE (if required) None	

25X1D

This station is located 3.5 nm southwest of Hanoi and 1.1 nm east of Ha Dong. It is served by a dirt road leading 0.5 nm northwest to Route 6. One AAA site is within 0.5 nm of the station (Figure 18).

The antenna farm contains two double rhombic antennas (one day-night pair), six horizontal dipole antennas (including two day-night pairs), and one VEE antenna (Figure 19). Feedlines lead from the transmitter building to all of the antennas. The feedlines for the rhombic antennas lead to a switch in the center of each antenna. Feeds leading from this switch to each end of the antenna permit transmission toward either Saigon or Lanchou, China (Figure 20). In addition, a dissipation line connected to the switch allows for a continuing connection to the end of the antenna opposite the antenna feed. One day-night pair of horizontal dipole antennas is oriented for transmission toward the Gulf of Tonkin and Lao Cai, while the other pair is oriented for transmission toward Nam Dinh and Kunming, China. The other two horizontal dipoles are oriented for transmission toward Chungking and Saigon and toward Cao Bang and Phnom Penh, Cambodia (Figure 21). The VEE antenna [REDACTED]

25X1B

25X1B

[REDACTED] is probably for omni-directional, short range communications.

The transmitters are in a single-story concrete building. Four support buildings, a barracks, a water tower, a gatehouse, and a substation are also within the walled control area. A possible personnel bunker and a water pond are outside the control area.

Electric power is provided from external sources via a substation within the control area. A diesel generator is probably available for emergency power; however, none has been identified on photography.

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NO FOREIGN DISSEM

NPIC/R-134/68

25X1C

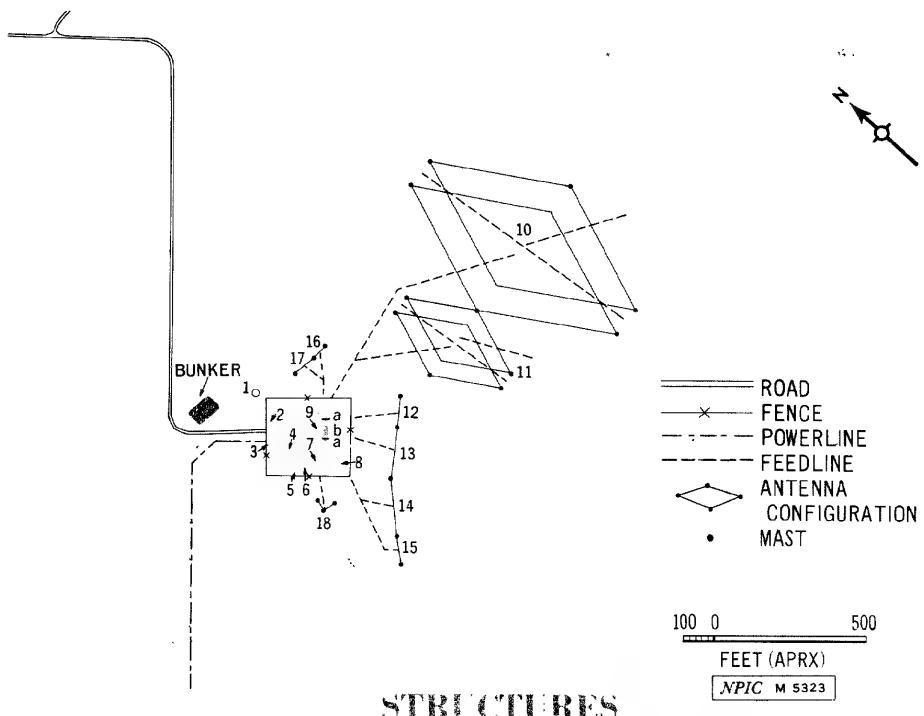


FIGURE 18. HANOI RADIO COMMUNICATIONS STATION, HA DONG NO 7, NORTH VIETNAM.

~~SECRET~~

NO FOREIGN DISSEM

25X1C



STRUCTURES

ITEM	DESCRIPTION	DIMENSIONS (FT)
1	POND	
2	GATEHOUSE	
3	SUBSTATION	
4	BARRACKS	
5	SUPPORT BUILDING	
6	SUPPORT BUILDING	
7	WATER TOWER	
8	SUPPORT BUILDING	
9	TRANSMITTER BUILDING (2)	
a		
b		



25X1D

RHOMBIC

ANT NO	AXIS MAX (FT)	AVERAGE LENGTH ONE SIDE (FT)	TILT ANGLE (°)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 20)	COMPUTED FREQUENCY (MEGAHERTZ)
25X1D	10 815	545	[REDACTED]	65	175/355 SAIGON, DJAKARTA, LANCHOU	[REDACTED]
	11 425	280	[REDACTED]	65	175/355 SAIGON, DJAKARTA, LANCHOU	25X1D

NOTE: EACH ANTENNA IS ASSUMED TO BE FOUR WAVELENGTHS LONG ON A SIDE.

DIPOLE

ANT NO	POLE SEPARATION (FT)	EST ANT LENGTH (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 21)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
25X1D	12 [REDACTED]	[REDACTED]	[REDACTED]	NAM DINH/KUNMING	[REDACTED]
	13 [REDACTED]	[REDACTED]	[REDACTED]	NAM DINH/KUNMING	[REDACTED]
	14 [REDACTED]	[REDACTED]	[REDACTED]	TONKIN GULF/LAO CAI	[REDACTED]
	15 [REDACTED]	[REDACTED]	[REDACTED]	TONKIN GULF/LAO CAI	[REDACTED]
	16 [REDACTED]	[REDACTED]	[REDACTED]	CHUNGKING/SAIGON	[REDACTED]
	17 [REDACTED]	[REDACTED]	[REDACTED]	CAO BANG/PHNOM PENH	25X1D

NOTE: ITEM 18, VEE ANTENNA, DATA IS UNKNOWN.

FIGURE 19. HANOI RADIO COMMUNICATIONS STATION, HA DONG NO 7, NORTH VIETNAM.

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Approved For Release 602008/04541 [REDACTED] 13-3 25X1C

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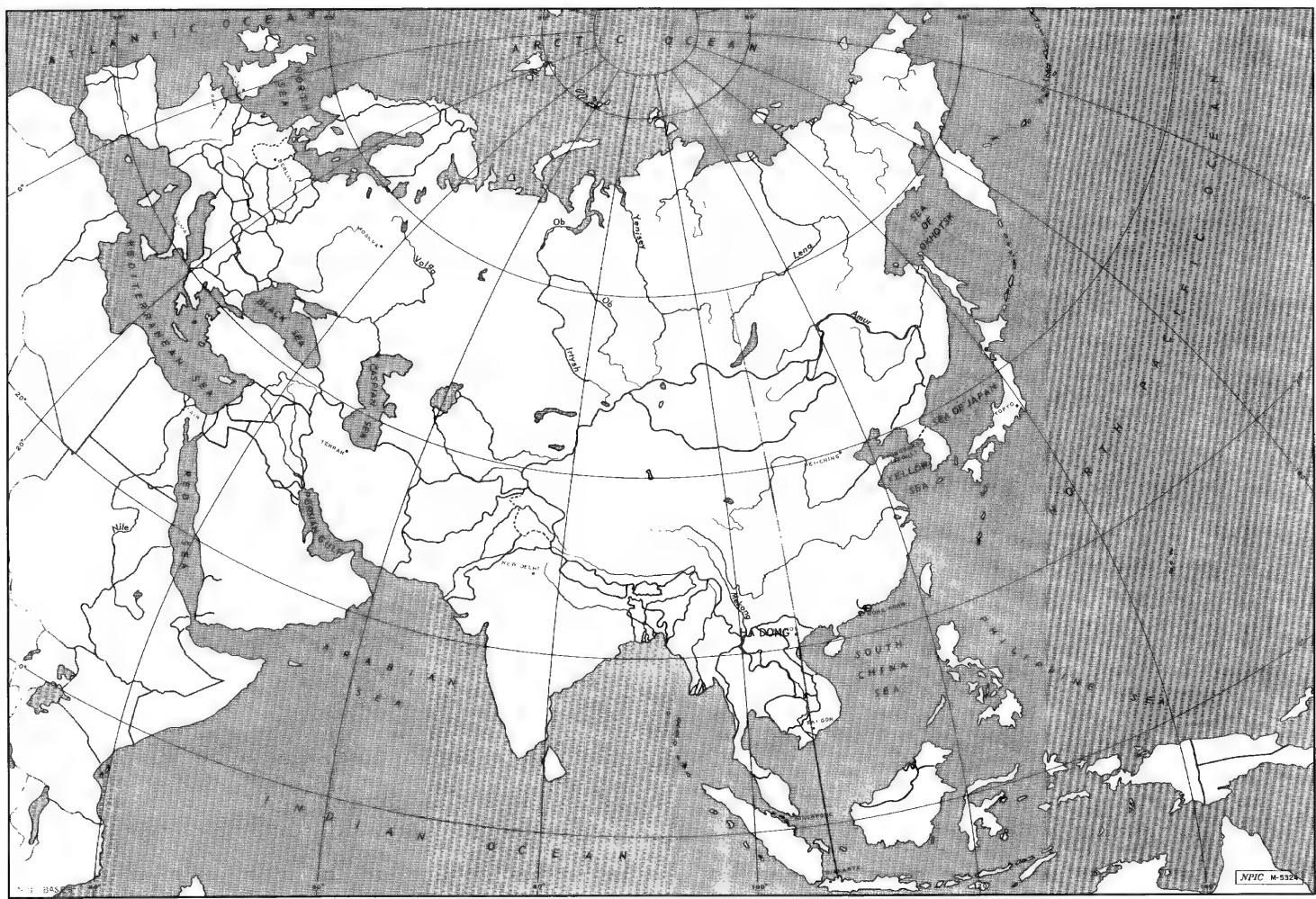


FIGURE 20. FORWARD AZIMUTH PROJECTIONS FOR RHOMBIC ANTENNAS AT HANOI RADIO COMMUNICATIONS STATION, HA DONG NO 7, NORTH VIETNAM.

- 30 -

SECRET

NO FOREIGN DISSEM [REDACTED] 13-3 25X1C
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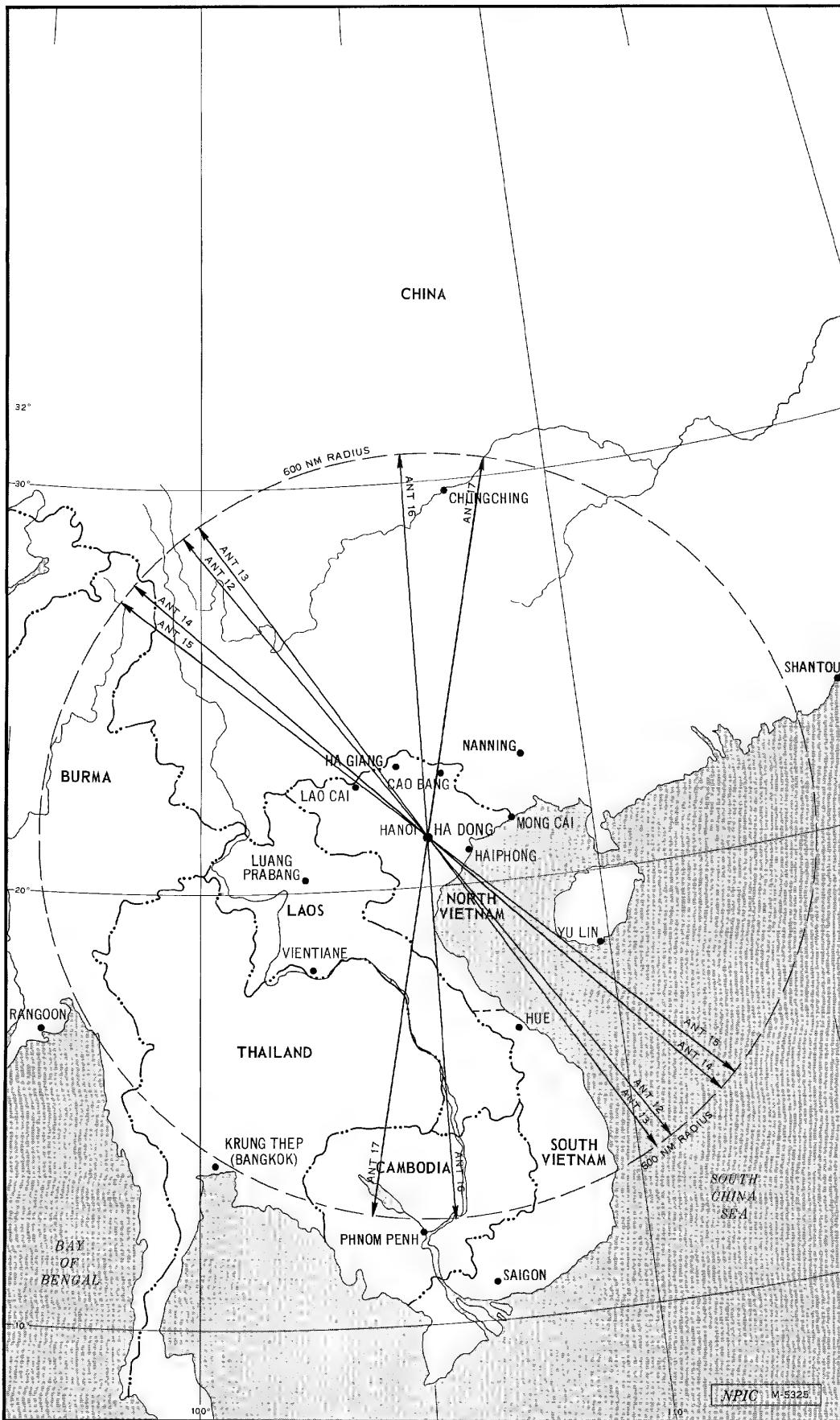


FIGURE 21. AZIMUTH PROJECTIONS FOR HORIZONTAL DIPOLE ANTENNAS AT HANOI RADIO COMMUNICATIONS STATION, HA DONG NO 7, NORTH VIETNAM.

25X1C

HANOI RADIO
COMMUNICATIONS RECEIVER,
PHU COC

[REDACTED] 25X1A
[REDACTED]

INSTALLATION OR ACTIVITY NAME

Hanoi Radio Communications	Receiver, Phu Coc	25X1A	COUNTRY
25X1D	25X1D		VN

UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	COMIREX NO.	NIETB NO.
	20-51 [REDACTED] N 105-53 [REDACTED] E	[REDACTED]	None	None

MAP REFERENCE
AMS Series L7014, Sheet 6150 I, 1st ed, 1965, Scale 1:50,000
(Unclassified)

LATEST IMAGERY USED	NEGATION DATE (if required)
[REDACTED]	None

25X1D

25X1A

This station, located 10.5 nm south-southeast of Hanoi and 0.4 nm east of Phu Coc, is served by a dirt road leading 1.2 nm west to Route 1A and the Hanoi-Vinh Railroad Line (Figure 22).

The antenna farm contains six double-bay FISHBONE, eight VEE, and six horizontal dipole antennas (Figure 23).

25X1B

25X1B

25X1B

The FISHBONE antennas would, however, still provide wide band, long range, high frequency reception from north Africa, Europe, southern China, Taiwan, southern Japan, Saigon, Cambodia, Java, and Sumatra (Figure 24). The VEE antennas [REDACTED] are probably for omni-directional, short range communications. The horizontal dipole antennas consist of three day-night pairs oriented for communications with Lang Son-Vientiane, Haiphong-Hoa Binh, and Dong Hoi-Ha Giang (Figure 25). Antenna feedlines from all antennas lead to the receiver building.

25X1B

The walled control area contains a two-story concrete receiver building, three support buildings, two gatehouses, and a substation. The fenced support area just north of the control area contains an auditorium, four two-story barracks, a messhall, a gatehouse, a substation (outside the fenced area), 13 support buildings, a water tower, a probable swimming pool, and a basketball court.

Electric power is provided from external sources via substations within the control and support areas. Diesel generators for emergency power are probably available; however, they have not been identified on photography.

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NO FOREIGN DISSEM [REDACTED]

NPIC/R-134/68

25X1C

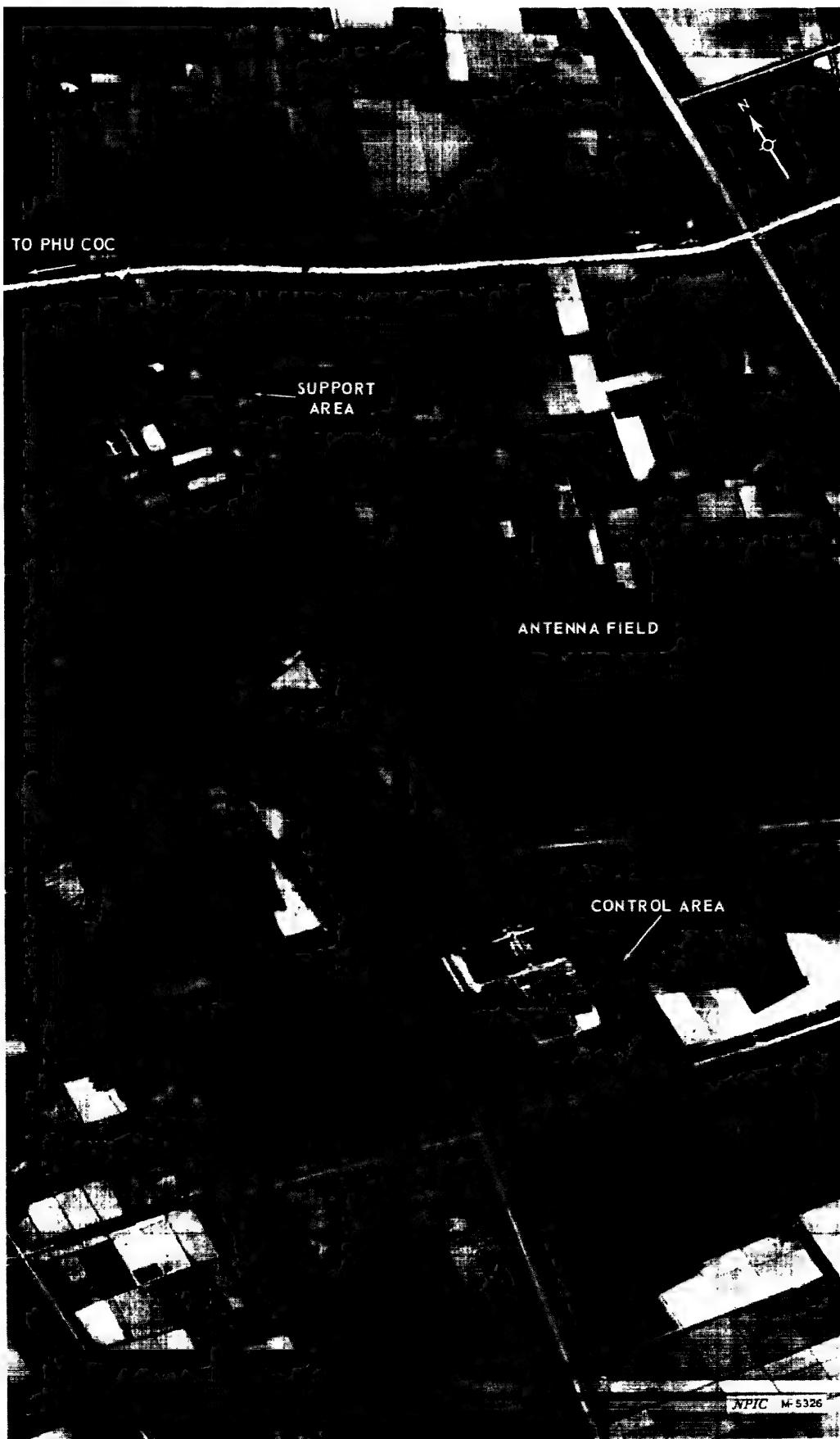


FIGURE 22. HANOI RADIO RECEIVER, PHU COC, NORTH VIETNAM.

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NO FOREIGN DISSEM [REDACTED]

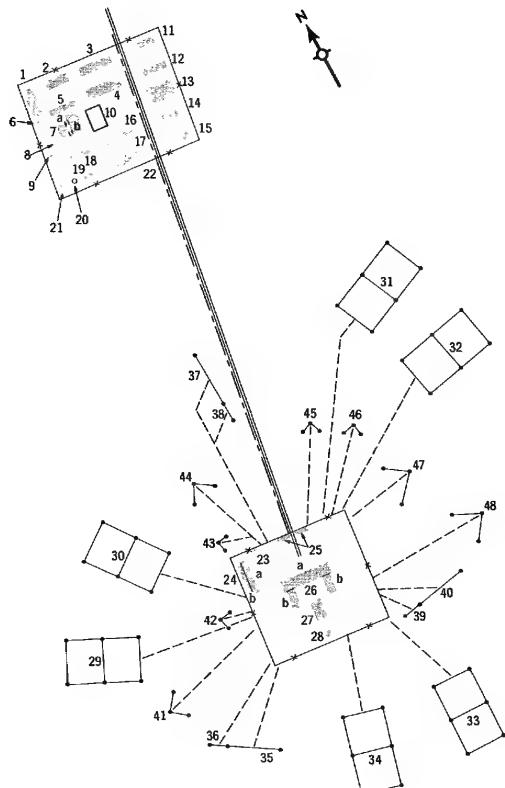
25X1C

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NPIC/R-134/68

Approved For Release 2000/04/17 :
NOT FOR FOREIGN DISSEMINATION

13-3 25X1C



————— ROAD
 × FENCE
 —— POWERLINE
 - - - FEEDLINE
 ANTENNA CONFIGURATION
 • MAST

200 0 500
FEET (APRX)

NPIC M-5327

ITEM	DESCRIPTION	DIMENSIONS (FT)
1	POOL	
2	SUPPORT BUILDING	
3	BARRACKS	
4	BARRACKS	
5	SUPPORT BUILDING	
6	SUPPORT BUILDING	
7	MESHLALL	
a	KITCHEN	
b	MESHLALL	
8	SUPPORT BUILDING	
9	SUPPORT BUILDING	
10	BASKETBALL COURT	
11	SUPPORT BUILDING	
12	SUPPORT BUILDING	
13	AUDITORIUM	
14	SUPPORT BUILDING	
15	SUPPORT BUILDING	
16	BARRACKS	
17	BARRACKS	
18	SUPPORT BUILDING	
19	SUPPORT BUILDING	
20	WATER TOWER	
21	SUPPORT BUILDING	
22	SUBSTATION	
23	SUBSTATION	
24	SUPPORT BUILDING	
a		
25	2 GATEHOUSES	
26	RECEIVER BUILDING	
a		
b		
27	(2) SUPPORT BUILDING	
28	SUPPORT BUILDING	

ANT NO	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 24)
--------	--	--

NORTH AFRICA
EUROPE
SOUTHERN CHINA,
SOUTHERN JAPAN
SOUTHERN CHINA,
TAIWAN
SAIGON, JAVA
CAMBODIA, SUMATRA

ANT NO	POLE SEPARATION (FT)	EST ANT LENGTH (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 25)	COMPUTED FREQUENCY (MEG赫) BY POLE SEPARATION
35	230			LANG SON/VIENTIANE	
36	80			LANG SON/VIENTIANE	
37	230			HAI PHONG/HOA BINH	
38	80			HAI PHONG/HOA BINH	
39	80			DONG HOI/HA GIANG	
40	230			DONG HOI/HA GIANG	

25X1D

**LANG SON/VIENTIANE
LANG SON/VIENTIANE
HAIPHONG/HOA BINH
HAIPHONG/HOA BINH
DONG HOI/HA GIANG
DONG HOI/HA GIANG**

25x1D

ANT NO	POLE SEPARATION (FT)	INCLUDED ANGLE (°)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
41	80		
42	50		
43	40		
44	80		
45	50		
46	50		
47	125		
48	125		

NOTE: EACH ANTENNA IS OMNI-DIRECTIONAL AND EACH LEG IS 1/4 WAVE LONG.

FIGURE 23. HANOI RADIO RECEIVER, PHU COC, NORTH VIETNAM.

25X1D 25X1D

SECRET

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13-3 25X1C

SECRET

NO FOREIGN DISSEM [REDACTED]

25X1C

NPIC/R-134/68

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FIGURE 24. FORWARD AZIMUTH PROJECTIONS FOR FISHBONE ANTENNAS AT HANOI RADIO RECEIVER, PHU COC, NORTH VIETNAM.

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NO FOREIGN DISSEM [REDACTED]

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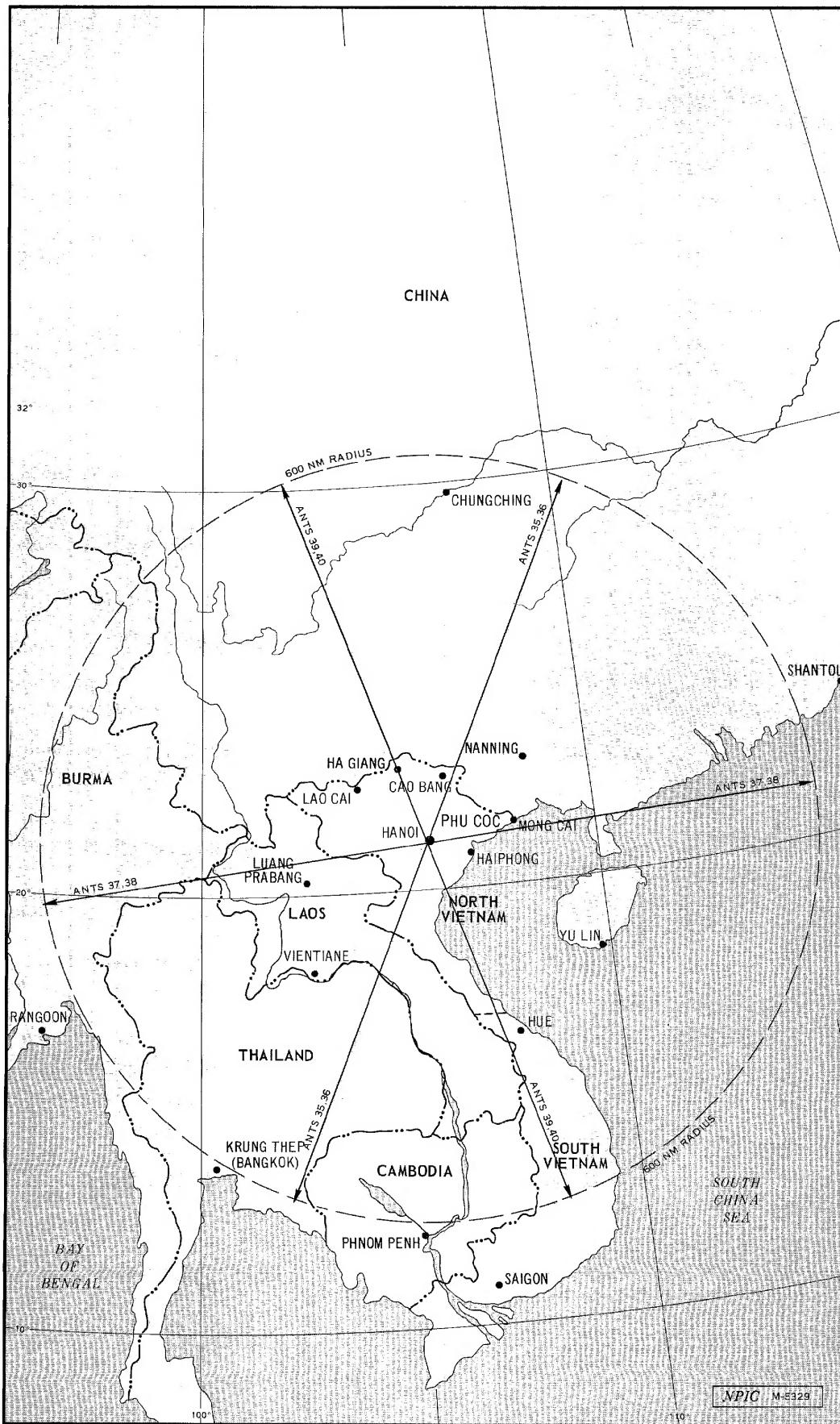


FIGURE 25. AZIMUTH PROJECTIONS FOR HORIZONTAL DIPOLE ANTENNAS AT HANOI RADIO RECEIVER, PHU COC, NORTH VIETNAM.

SECRET

NO FOREIGN DISSEM [REDACTED]

25X1C

Next 2 Page(s) In Document Exempt

25X1C

REFERENCES (Continued)

25X1C

DOCUMENTS

1. NPIC. R-267/66, Southeast Asia Activity Report, Communications Facilities, North Vietnam, Feb- 25X1A
ruary 1968 (SECRET/No Foreign Dissem [REDACTED] used for all items.
2. CIO/CIA. NPIC Report No. 270/66, 27 June 1966, enclosure in [REDACTED]
(CONFIDENTIAL) used for the Hanoi International Radio Receiver, Son Dong.
3. NPIC. R-47/68, Photographic Interpretation Memorandum, Hanoi Area Communications Facilities
Probably Used for Insurgency Operations, March 1968 (CONFIDENTIAL/No Foreign Dissem [REDACTED] 25X1C
[REDACTED] for the Lang Truoc Radio Communications Transmitter.
4. US Department of Commerce. JPRS. 33,926, 27 January 1966, translation from Russian of Antennas
and Masts, F. A. Savitskiy, Ministry of Communications, USSR, Moscow, 1962, pp. 70-88 (UN-
CLASSIFIED) used for all items.
5. Jasik, Henry, ed. Antenna Engineering Handbook, McGraw-Hill Book Company, Inc., New York,
1961 (UNCLASSIFIED) used for all items.
6. Laport, Edmund A. Radio Antenna Engineering, McGraw-Hill Book Company, Inc., New York,
1952 (UNCLASSIFIED) used for all items.

REQUIREMENT

NSA. SOC/R 139-67

NPIC Project 250135AF

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